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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/049,556	05/07/2002	David Graham Little	RICE-006	7597

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EXAMINER	
KANTAMNENI, SHOBHA	

ART UNIT	PAPER NUMBER
1617	

DATE MAILED: 11/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/049,556	LITTLE, DAVID GRAHAM	
	Examiner	Art Unit	
	Shobha Kantamneni	1617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 August 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *48-53,63-66,73,74,79 and 80* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *NONE* is/are allowed.

6)☒ Claim(s) *48-53, 63-66, 73-74, 79-80* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This office action is in response to the applicant's response filed on 08/23/2006, wherein claims 48-49, 63 have been amended.

Applicant's amendment is sufficient to overcome the rejection of claims 48-53, 63-66, 73-74, 79-80 under 35 U.S.C. 112, second paragraph, as being indefinite.

Applicant's arguments have been considered, but not found persuasive, and the rejection of claims 48-52, 63-64 under 35 U.S.C. 102(b) as being anticipated by Yates (US 5,646,134, PTO-892) is MAINTAINED. See under response to arguments.

Applicant's arguments have been considered, but not found persuasive, and the rejection of claims 48-53, 63, 73, and 79 under 35 U.S.C. 102(a) as being anticipated by Ke et al. (US 6,352,970, PTO-892) is MAINTAINED. See under response to arguments.

Applicant's arguments have been considered, but not found persuasive, and the rejection of claims 48-50, 52-53, 63-66, 74, and 80 under 35 U.S.C. 102(b) as being anticipated by GEDDES (WO 93/11786, PTO-1449) is MAINTAINED. See under response to arguments.

Applicant's amendment by inserting "human" as subject has overcome the rejection of claims 48-51, and 63-64 under 35 U.S.C. 102(b) as being anticipated by Goodship et al. (Annals of Oncology 5 (Suppl 7), S53-S55, 1994, PTO-1449).

Claims 48-53, 63-66, 73-74, and 79-80 are pending.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 48-52, 63-64 are rejected under 35 U.S.C. 102(b) as being anticipated by Yates (US 5,646,134, PTO-892).

Yates discloses a method for promoting bone growth at a fracture site comprising administering bisphosphonate to a patient such as human. See column 1, lines 33-38; column 2, lines 64-67; column 4, lines 10-14; column 6, EXAMPLE. It is disclosed that the bisphosphonate can be administered to the periprosthetic bone area systemically either orally as tablets and/or parenterally, including subcutaneous or intravenous injection, or can be delivered in a slow release form. The bisphosphonate can be administered locally to the specific periprosthetic area in need of bone growth or repair. See column 3, lines 54-66. It is also taught that the bisphophonates can be administered by coating the orthopedic implants at the time of the implant operation i.e at an early stage of the treatment of fractured bone or near the time of surgery. See column 4, lines 14-16. An effective dose of bisphophonate is about 1.5 to 3000 μg/kg per day of body weight. Effective doses for local administration are about 0.001 μg to 1 mg per application site. See column 5, lines 1-5.

Thus Yates anticipates the instant claims 48-52, 63-64.

Response to Arguments

Applicant argues that "Yates is directed to a therapy for preventing periprosthetic bone loss by the administration of a bisphosphonate bone resorption inhibitor. While Yates expresses a desire for the development of "localized controlled/extended release dosage forms of bone growth promotant" (col. 1, lines 33-35), Yates does not hold out its bisphosphonate therapy as such a bone growth promotant. Instead, Yates consistently characterizes its use of the bisphosphonate alendronate as "specifically prevent[ing] bone resorption in the periprosthetic bone area of an orthopedic implant device" (col. 2, lines 35-38)". This argument has been considered, but not found persuasive because Yates discloses that bisphosphonate is administered to the specific periprosthetic area in need of bone growth. See column 3, lines 60-65. Thus, Yates explicitly discloses that bisphophonate therapy therein promotes bone growth, and thus anticipates instant claims 48-52, 63-64.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 48-53, 63, 73, and 79 are rejected under 35 U.S.C. 102(a) as being anticipated by Ke et al. (US 6,352,970, PTO-892).

Ke et al discloses that Zoledronate, the specific bisphosphonate of claim 73 is capable of treating bone fractures. See column 5, lines 22-29. The mode, dosage as a single dose, site, time and regiments of administration of claims 49-53 are taught at column 16, lines 13-64, column 17, lines 1-25 and lines 40-55. It is taught that the administration can be done in a regiment to the site as determined by the patients needs. The dosage of bisphosphonates is from about 0.1 to 10 mg/kg/day. See column 15, lines 28-33. The reference also discloses that administration of zoledronate can be transdermal, intravenous or oral routes. See column 17, lines 1-7.

With respect to the recitation "a method for promoting bone growth at a fracture site", Ke's method will inherently promote bone growth at a fracture site, since the method steps are same as instantly claimed.

Response to Arguments

Applicant argues that "Ke focuses on the use of leptin or a leptin mimetic (at times in combination with estrogen, a selective estrogen receptor modulator or a bisphosphonate) for treating low bone mass or bone fracture. Since Ke refers, in general, to the use of leptin alone for these purposes, one of ordinary skill in this art would not, upon reading Ke, have any reason to believe that a bisphosphonate on its own would be effective for the purposes set forth therein." This argument has been considered, but not found persuasive because Ke et al discloses that bisphophonates such as Zoledronate in combination with leptin or leptin mimetic are employed in treating bone fractures. See column 5, lines 22-29; column 6, lines 9-12. Further, Ke also discloses that the method therein result in bone formation. See column 7, line 32.

Thus, Ke's method of administering bisphophonates will inherently promote bone growth at a fracture site, as claimed herein since Ke's method steps are same as the instant method steps, administering the same compound in the same amount to the same or similar patient population. See *Ex parte Novitski*, 26 USPQ 2d 1389, 1391 (Bd. Pat. App. & Int. 1993). See also *Eli Lilly and Co. v. Barr Laboratories Inc*. 251 F3d. 955; 58 USPQ2d 1869-1881 (Fed. Cir. 2001) with regard to inherency as it related to the claimed invention herein. Further, it is respectfully pointed out that the instant method of promoting bone growth at a fracture site uses the transition phrase "comprising" which does not exclude other steps such as administering other drugs along with bisphophonates.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 48-50, 52-53, 63-66, 74, and 80 are rejected under 35 U.S.C. 102(b) as being anticipated by GEDDES (WO 93/11786, PTO-1449).

Geddes et al. disclose a method of increasing bone mass in a human afflicted with osteoporosis comprising administering a bisphosphonate administration regimen. See abstract; page 20, lines 13-27. It is disclosed that the bisphophonate is administered at least 1 day of every thirty day period i.e about 4 to 6 weeks after the

initial dose. See page 5, lines 25-31. It is also taught that the therapeutic regimen comprising bisphosphonate is administered for at least about twelve months or until a net skeletal mass is obtained. See page 25, lines 8-15. It is taught that the treatment regimen can comprise a combination of two or more bisphosphonates. See pages 20-22. Bisphosphonates can be administered orally as a tablet containing 0.002 mgP/kg per day, in a unit-dosage form. Administration of bisphosphonates by intraperitoneal, intravenous, parenteral, transdermal routes is also disclosed. See page 25, and page 27, bottom paragraph. It is disclosed that when a human, African-American male with a history of atraumatic fractures was administered once a week with bisphosphonate, 4-amino-1-hydroxy-1,1-bisphosphonic acid, orally as a tablet containing 0.03 mgP/kg per day, demonstrated an increase in 14.5 mg/cc spinal bone mineral, and no further atraumatic fractures were observed. See page 29, EXAMPLE 2.

With respect to the recitation "a method for promoting bone growth at a fracture site", Gedde's method will inherently promote bone growth at a fracture site, since the method steps are same as instantly claimed.

Thus Geddes anticipates the instant claims 48-50, 52-53, 63-66, 74, and 80.

Response to Arguments

Applicant argues that "Geddes provides no teaching at all with regard to the use of a bisphosphonate at a fracture site. The fact that a bisphosphonate can be useful in the treatment of osteoporosis does not imply its usefulness to promote bone growth or new bone formation at a fracture site. What is more, Geddes example of treating a male with a history of atraumatic fractures with a combination of parathyroid hormone and a

bisphosphonate does not suggest treatment of a human subject with a fracture with a bisphophonate alone". This argument has been considered, but not found persuasive because Geddes discloses a method of treating a male with atraumatic fracture by administering a bisphosphonate. Thus, Geddes method of administering bisphophonates will inherently promote bone growth at a fracture site, as claimed herein since Geddes method steps are same as the instant method steps, administering the same compound in the same amount to the same or similar patient population. See *Ex parte Novitski*, 26 USPQ 2d 1389, 1391 (Bd. Pat. App. & Int. 1993). See also *Eli Lilly and Co. v. Barr Laboratories Inc.* 251 F3d. 955; 58 USPQ2d 1869-1881 (Fed. Cir. 2001) with regard to inherency as it related to the claimed invention herein. Further, it is respectfully pointed out that the instant method of promoting bone growth at a fracture site uses the transition phrase "comprising" which does not exclude other steps such as administering other drugs along with bisphophonates. Thus Geddes anticipates the instant claims 48-50, 52-53, 63-66, 74, and 80.

Conclusion

No claims are allowed.

THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period, will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shobha Kantamneni whose telephone number is 571-272-2930. The examiner can normally be reached on Monday-Tuesday, and thurday-Friday, between 7.30am-3.30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sreeni Padmanabhan, Ph.D can be reached on 571-272-0629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Shobha Kantamneni, Ph.D
Patent Examiner
Art Unit : 1617

SREENI PADMANABHAN
SUPERVISORY PATENT EXAMINER